

Zero retrofit: standard NIR technology detects markers and paves the way to the Circular Economy



Representing different process steps up to recycling: from left to right: Achim Helmenstein, Managing Director of Fischbach KG, Marco Flosbach, Sales Director at Fischbach KG, Swen Peters, Packaging Equipment, Technology & Sustainability Henkel, Hendrik Beel, Managing Director of STEINERT UniSort, Tobias Herzog, Managing Director of Tailorlux (photo taken under corona-compliant conditions)

Only outstanding innovations in packaging receive the German Packaging Award. In 2021, packaging producer Fischbach KG and marker manufacturer Tailorlux received the German Packaging Award in GOLD for this development. Sorting specialist STEINERT UniSort developed the technology for detection, based on standard NIR (near-infrared) detection in existing systems.

Achim Helmenstein, Managing Director of Fischbach KG, Tobias Herzog, Managing Director of Tailorlux, and Hendrik Beel, Managing Director of STEINERT UniSort, together designed a marker that now finally makes it possible to distinguish food from non-food packaging, locates products that cannot be sorted, and sorts out packaging with ingredients that hinder recycling.

Tailorlux marking serves as a feature for non-recyclable products

One important application is non-sortable products, because a harmful ingredient (which includes silicones in particular) as a residue in a cartridge impairs the recycling of PE packaging. Standard NIR sorting systems in sorting plants detect the Tailorlux marker on PE packaging that is not yet recyclable at lightning speed and sort the object out immediately. In this way, the PE recovered from the sorting plant remains free of impurities and can be turned into a new PE product, in the mindset of the Circular Economy. The marking consists of a print made of UV screen printing inks, which can be applied in-line with standard screen printing at Fischbach KG. It is hardly visible to the naked eye, but its colors provide a good NIR absorption band.

Conventional technology detects markers

All that is required is a software update, which operators of sorting systems can request from STEINERT UniSort in order to benefit from this innovation without any complications. For the sorting plant, the integration effort is therefore very low and works with conventional technology. Hendrik Beel sums up: "On the way to the Circular Economy, parties representing different process steps in recycling must approach each other and work together. Our team has succeeded in taking another step by being able to detect markers with absolute standard technology, i.e. without retrofitting."



From left to right: Hendrik Beel, Managing Director of STEINERT UniSort, Achim Helmenstein, Managing Director of Fischbach KG, Tobias Herzog, Managing Director of Tailorlux, Swen Peters, Packaging Equipment, Technology & Sustainability Henkel, Marco Flosbach, Sales Director at Fischbach KG, discuss the results of their cooperation in the STEINERT Test Center (under corona-compliant conditions).

Outlook on the Circular Economy

The partner companies Fischbach KG, Tailorlux and Steinert UniSort are currently working with other technology partners to also close the complete cycle for the recovery of residual materials from the cartridges, as well as the recycling of the cartridge packaging itself. These are innovative and exciting advancements in recycling technology.

